
News Release

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Report card is mixed on water quality in the Clark Fork–Pend Oreille and Spokane River Basins

News Editors: A .jpg map is available for downloading from

<http://id.water.usgs.gov/PDF/pressrelease.html> Photo caption: Cobble-bedded channel of Spokane River allows rapid percolation of water to the underlying Spokane Valley/Rathdrum Prairie aquifer.

Many miles of the Clark Fork and Coeur d'Alene River are still affected by arsenic, lead, and other trace elements from historical mining, according to a three-year investigation of water quality by the U.S. Geological Survey (USGS) in the Clark Fork–Pend Oreille and Spokane River Basins. On a positive note, ground water used for drinking supply in these basins, which include parts of Washington, Idaho, and Montana, typically is of good quality despite continued urban development.

The results from the recently released USGS report indicate that concentrations of arsenic, cadmium, copper, lead, and zinc in streambed sediment in the Clark Fork, South Fork Coeur d'Alene, and Coeur d'Alene Rivers are among the highest in the nation, compared with concentrations in samples collected by USGS researchers from 50 major river basins elsewhere in the country.

The study also found that trace elements in streams correlate with fewer native fish and invertebrates. "Unfortunately, trace elements bound to sediment are transported over large distances in streams, especially during storm events and spring snowmelt runoff," states Greg Clark, USGS hydrologist and principal author. "We measured elevated concentrations of some trace elements in sediment samples from the Clark Fork and the Pend Oreille and Spokane Rivers that were collected hundreds of miles downstream from historical mining areas."

In contrast, ground water in the Spokane Valley and surrounding area and the Missoula and Bitterroot Valleys is generally of good quality. Few constituent concentrations in ground water in these areas exceed U.S. Environmental Protection Agency (USEPA) standards and guidelines. Those constituents that do exceed guidelines, for example, radon and arsenic, most likely are a result of natural processes and not human activities. Although some pesticides and volatile organic compounds (VOCs) were detected in ground water, their concentrations are extremely low and well below USEPA standards and guidelines.

Other findings of the report include:

- Radon concentrations in 60 of 61 wells sampled in the Spokane, Missoula, and Bitterroot Valleys exceed a proposed USEPA drinking-water standard of 300 picocuries per liter. Radon, a leading cause of lung cancer, occurs naturally and is frequently found in ground water in the Rocky Mountain Region where water-supply wells are drilled into bedrock aquifers composed of igneous and metamorphic rocks. None of the wells sampled in this study contain radon concentrations exceeding 4,000 picocuries per liter, a less stringent standard being proposed by some States in cooperation with the USEPA.
- Spokane River water seeping into the streambed transports small quantities of dissolved zinc into the underlying Spokane Valley/Rathdrum Prairie alluvial aquifer. However, zinc concentrations in the aquifer are relatively small and decrease rapidly with distance from the Spokane River. Concentrations of other trace elements in the aquifer near the Spokane River are below drinking-water standards and guidelines, and most are below laboratory reporting levels.
- Concentrations of polychlorinated biphenyls, or PCBs, in fish from the Spokane River exceed limits for human consumption and protection of fish-eating wildlife. Although the concentrations of PCBs in tissue of fish from the Spokane River are in the upper 50 percent nationally, they are much lower than concentrations in tissue samples of fish from some urban and agricultural streams in the northeastern United States.
- Concentrations of nutrients (nitrogen and phosphorus) in streams in the Clark Fork-Pend Oreille and Spokane River Basins are among the lowest in the nation. However, Clark notes that “there are some streams where algae overgrowth is a problem, primarily downstream from the city of Spokane. Nutrients may become more of an issue as the population of the study area continues to grow and more streams are affected by effluent from sewage-treatment facilities.”

Copies of the USGS report, "Water Quality in the Northern Rockies Intermontane Basins, Idaho, Montana, and Washington, 1999-2001," published as USGS Circular 1235, are available free of charge by writing the USGS Branch of Information Services, Box 25286, Denver Federal Center, Denver, CO 80225 (or by calling 1-888-ask-usgs). The report also can be accessed on the World Wide Web at http://water.usgs.gov/nawqa/nawqa_sumr.html

The USGS assessment is part of a national program currently releasing results on streams and ground water in 14 additional major river basins and aquifer systems. Findings of regional and national interest are highlighted in a separate report "Water Quality in the Nation's Streams and Aquifers—Overview of Selected Findings, 1991-2001." Check the status and availability of these reports on the NAWQA Website, as well as accessibility to other publications and national data sets and maps.

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